

**Before the  
FEDERAL COMMUNICATIONS COMMISSION  
Washington, D.C. 20554**

In the Matter of	)	
	)	
	)	
Amendment of Part 2 of the Commission's	)	
Rules to Allocate Spectrum Below 3 GHz	)	
For Mobile and Fixed Services to Support the	)	ET Docket No. 00-258
Introduction of New Advanced Wireless	)	
Services, including Third Generation	)	
Wireless Systems	)	
	)	
Petition for Rulemaking of the Cellular	)	
Telecommunications Industry Association	)	RM-9920
Concerning Implementation of WRC-2000:	)	
Review of Spectrum and Regulatory	)	
Requirements for IMT-2000	)	
	)	
Amendment of the U.S. Table of	)	
Frequency Allocations to Designate the	)	RM-9911
2500-2520/2670-2690 MHz Frequency	)	
Bands for the Mobile Satellite Service	)	
	)	

**PETITION FOR RECONSIDERATION OF  
THE SATELLITE INDUSTRY ASSOCIATION**

Pursuant to Section 1.429 of the Commission's Rules,<sup>1</sup> the Satellite Industry Association ("SIA"),<sup>2</sup> hereby respectfully submits its petition for reconsideration of the

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<sup>1</sup> 47 C.F.R. § 1.429.

<sup>2</sup> SIA is a national trade association representing the leading U.S. satellite manufacturers, service providers, and launch service companies. SIA serves as an advocate for the U.S. commercial satellite industry on regulatory and policy issues common to its members. With member service companies providing a broad range of manufactured products and services, SIA represents the unified voice of the U.S. commercial satellite industry. SIA's members include: American Mobile Satellite Corporation; Boeing Commercial Space Company; COMSAT Corporation; Ellipso Inc.; GE American Communications, Inc.; Globalstar L.P.; Hughes Communications, Inc.; Iridium LLC; Lockheed Martin Corp.; Loral Orion Network Services Inc.; Loral Space &

Commission's *Order* in the above-captioned proceeding.<sup>3</sup> As described in greater detail below, the Commission should reconsider its decision not to allocate the 2500-2520 MHz and 2670-2690 MHz bands for Mobile Satellite Service ("MSS") use for third generation wireless services. Reconsideration is appropriate because neither of the Commission's bases for refusing to make this allocation—the apparent infeasibility of sharing between Fixed Services and MSS, and the putative sufficiency of the supply of MSS spectrum—withstands scrutiny.

## **I. INTRODUCTION AND BACKGROUND**

At the 1992 World Administrative Radio Conference ("WARC-92"), the International Telecommunications Union ("ITU") adopted an allocation for MSS at 2500-2520 MHz (space-to-earth) and 2670-2690 MHz (earth-to-space) ("2.5 GHz bands"). At the World Radio Conference 2000 ("WRC-00"), the 2.5 GHz bands were designated for use by the satellite component of International Mobile Telecommunications 2000 ("IMT-2000").<sup>4</sup> The Satellite Industry Association ("SIA"), in its Petition for Rulemaking, requested that the Commission conform the United States Table of Frequency

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Communications, Ltd.; Motorola, Inc.; Orbital Sciences Corporation; PanAmSat Corporation; Teledesic Corporation; TRW Inc.; and Williams Vyxx Services. Motorola Inc. is not a party to this Petition.

<sup>3</sup> Amendment of the U.S. Table of Frequency Allocations to Designate the 2500-2520/2670-2690 MHz Frequency Bands for the Mobile Satellite Service (Order), RM-9920, FCC 00-455 (rel. Jan. 5, 2001) ("*Order*"). The *Order* was published at 66 Fed. Reg. 7438 (Jan. 23, 2001).

<sup>4</sup> See *Addendum and Corrigendum to the Final Acts of the World Administrative Radio Conference* (Malaga-Torremolinos 1992); *Provisional Final Acts World Radiocommunication Conference 2000*, Article S5 (Istanbul 2000).

Allocations to the allocations made at WARC-92 and WRC-00.<sup>5</sup> In its *Petition*, SIA set forth the following facts: (1) because many other countries have allocated these 2.5 GHz bands for MSS use, a United States allocation will facilitate seamless global roaming; (2) in order to provide an increased level of service to rural and insular areas and new third generation services, MSS providers are in need of more spectrum; (3) because the 2.5 GHz bands are close to the frequencies used by the current generation of MSS, these bands are well suited to the satellite component of IMT-2000; and (4) because it takes four to six years to build out an MSS system and the effective date of the global allocation is January 1, 2005, the Commission should act quickly on SIA's request.<sup>6</sup>

Globalstar and ICO Global Communications Services, Inc. (“ICO”) filed comments supporting the *SIA Petition*. These commenters agreed with SIA that: (1) MSS spectrum is in short supply—virtually all of the spectrum that the Commission has designated for MSS has been assigned or will soon be assigned;<sup>7</sup> (2) in order to offer their customers a richer variety of seamlessly available nationwide and global voice and data services, MSS providers will need additional spectrum;<sup>8</sup> (3) MSS providers can provide broadband services to rural areas in a cost-effective fashion;<sup>9</sup> and (4) Low Earth

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<sup>5</sup> See “Amendment of the U.S. Table of Frequency Allocations to Designate the 2500-2520/2670-2690 MHz Frequency Bands for the Mobile Satellite Service,” Petition for Rulemaking of the Satellite Industry Association (filed April 28, 2000) (“*SIA Petition*” or “*Petition*”). Comments on the SIA Petition were solicited by *Public Notice*, “Comment Invited on Third Generation Wireless/IMT-2000 Petitions,” RM-9911 and RM-9920 (rel. July 28, 2000).

<sup>6</sup> *SIA Petition* at i-ii.

<sup>7</sup> Globalstar Comments at 4.

<sup>8</sup> *Id.* at 4-6.

<sup>9</sup> *Id.* at 5; ICO Comments at 1-2; See also *Extending Wireless Telecommunications Services to Tribal Lands*, (Notice of Proposed Rulemaking) 14 FCC Rcd 13679, ¶ 12 (1999).

Orbit (“LEO”) MSS providers have only 27.85 MHz of shared, bi-directional spectrum for their entire package of services, but the forecasted spectrum requirements for MSS providers offering access to IMT-2000 services are 2 x 31.5 MHz by 2005 and 2 x 67 MHz by 2010.<sup>10</sup>

Globalstar and ICO also joined SIA in urging that allocating the 2.5 GHz bands for MSS would facilitate international roaming and the cost-effective provision of MSS.<sup>11</sup> Preliminarily, these are the *only* internationally-allocated MSS frequency bands that are likely to be available for global satellite service in the foreseeable future, and the spectrum has been adopted internationally for MSS for almost ten years. In previous mobile service allocations, the Commission has not always been able to make United States allocations consistent with counterpart allocations in other regions of the world. While SIA understands that such uniform allocations are not always possible, in this case, granting the *SIA Petition* would keep open that possibility for IMT-2000 MSS services. This would be of substantial value to both domestic and international users of the service.<sup>12</sup>

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<sup>10</sup> Globalstar Comments at 5-6; Conference Preparatory Meeting Report on Technical, Operational and Regulatory/Procedural Matters to be Considered by the 2000 World Radiocommunication Conference, Section 1.1; Part B.2, Table 1-2 (Geneva 1999) (“CPM Report”).

<sup>11</sup> Globalstar Comments at 6; ICO Comments at 2.

<sup>12</sup> *Amendment of the Commission's Rules to Establish Rules and Policies Pertaining to a Mobile-Satellite Service in the 1610-1626.5/2483.5-2500 MHz Frequency Bands*, (Report and Order) 9 FCC Rcd 5936, 5938 (1994) (“Big LEO Proceeding”) (“This new mobile satellite service ... has the potential to provide not only a variety of new services to users in the United States, but to provide integrated communications services to all parts of the world, including those that are now grossly underserved.”). *See also, Big LEO Proceeding* (Memorandum Opinion and Order), 11 FCC Rcd 12861 (1996).

Moreover, the 2.5 GHz bands are proximate to the 2483.5-2500 MHz band already in use by MSS and the bands that the Commission is considering allocating for use by third generation terrestrial services.<sup>13</sup> If the frequency band used by the satellite component of IMT-2000 is similar to the bands already used by MSS, the technical challenges and the cost of modifying transponders for second-generation, multi-band satellites and the cost of handsets to provide new third generation services will be reduced. Similarly, if the frequency band used by the satellite component of IMT-2000 is proximate to the band assigned to third generation terrestrial services, equipment manufacturers can develop analogous handset and transmission technologies for both services.

## **II. THE COMMISSION HAS NOT PROVIDED A REASONED BASIS FOR DENYING SIA'S PETITION FOR RULEMAKING**

As described above, SIA, Globalstar, and ICO offered a number of persuasive technical, economic, and policy reasons why the *SIA Petition* should have been granted. In its *Order* dismissing the *Petition*, the Commission failed to rebut these arguments. In fact, the FCC, citing comments of MMDS and ITFS users and providers, offered only two reasons for denying the relief sought by SIA: (1) sharing between terrestrial (*i.e.*, MMDS, ITFS) and satellite systems would present substantial technical challenges in that band; and (2) MSS already has access to a significant amount of spectrum below 3 GHz to meet its future needs.<sup>14</sup> SIA respectfully submits that neither of these reasons withstands scrutiny.

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<sup>13</sup> Globalstar Comments at 7.

<sup>14</sup> *Order*, ¶ 73 (citing Mississippi Authority for Educational Television Comments; Arizona Bd. Of Regents Comments; WorldCom, Inc. Comments).

**A. There Is No Evidence That Spectrum Sharing Between Fixed Services and MSS Will Result In Interference**

With regard to sharing, interference between MMDS/ITFS and MSS was addressed in a TIA joint working group TR14.11/TR34.2, which developed TSB 86 on sharing between the MSS and the Fixed Services (including ITFS and MMDS) in the 2 GHz bands. Until the MMDS and ITFS interests present a technical argument that refutes the findings of the TIA group, which they have not attempted to do in this proceeding, the FCC can—and should—give deference to the TIA group's professional assessment that sharing between the MSS and the Fixed Services is feasible.

Further, given that MSS is expected to remain largely a rural service, and the economics of MMDS/ITFS dictate that the service be deployed only in more densely populated urban areas, any potential interference incidents should be manageable. According to MMDS and ITFS users and licensees themselves, these services will be morphing into “broadband” Internet-to-the-home services,<sup>15</sup> which will be used mainly in urban areas. In urban areas most MSS phones (including Globalstar’s) will be programmed to utilize less expensive terrestrial cellular or PCS links rather than more costly MSS links. On the other hand, MSS phones will utilize MSS links in rural areas where there is no cellular or PCS service. In such areas ITFS/MMDS terminal density should be very low. Thus, the geographic separation of MSS and ITFS/MMDS users should significantly alleviate any potential interference between the services.

Interference from MSS spacecraft into MMDS/ITFS systems was also addressed by the ITU over the 1994-1996 time period. ITU-R Recommendations exist

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<sup>15</sup> Wireless One of North Carolina, L.L.C. Comments at 3; National ITFS Association Comments at 2.

that limit Power Flux Density (“PFD”) at the surface of the earth to protect Fixed Service systems operating in the 2500-2520 MHz and 2670-2690 MHz bands. These limits have been incorporated into the ITU’s Radio Regulations. While the MMDS and ITFS interests argue that these limits are not sufficient to protect them,<sup>16</sup> they have not presented any technical evidence to support that claim.

### **B. Existing Spectrum Allocations for MSS are Insufficient**

The Commission should also reconsider its conclusion that MSS providers have sufficient spectrum to meet their current and future needs. While the *total* allocations for MSS in the 1-3 GHz range is 170.5 MHz, individual LEO MSS providers have access to *only* 11.35 MHz of uplink spectrum and 16.5 MHz of downlink spectrum in the United States in the 1.6 and 2.5 GHz bands. In fact, the majority of this 170.5 MHz of spectrum is used by Geostationary Orbit (“GSO”) MSS systems such as Inmarsat, Motient, TMI, and others who use the 1525-1559 MHz and 1626.5-1660 MHz bands. Such GSO MSS providers have expanding spectrum needs and cannot be expected to share their spectrum with LEO MSS providers, nor is such sharing among existing systems feasible.<sup>17</sup>

There is also little room for MSS providers to expand into the “2 GHz spectrum” (1990-2025 MHz and 2165-2200 MHz), where each provider will have access to only 8.8 MHz or less of spectrum. In particular, the 2 GHz spectrum has been divided

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<sup>16</sup> See, e.g., WorldCom, Inc. Comments at 6-8.

<sup>17</sup> See *Amendment of Parts 2 and 25 of the Commission’s Rules to Permit Operation of NGSO FSS Systems Co-Frequency with GSO and Terrestrial Systems in the Ku-Band Frequency Range*, ET Docket 98-206, RM-9147, RM-9245 (First Report and Order and Further Notice of Proposed Rulemaking), FCC 00-418, ¶ 19 (released Dec. 8, 2000) (it is

into  $35/(X + 1)$  MHz blocks, where X represents the number of applicants.<sup>18</sup> Because there are currently seven to nine applicants for this spectrum, each licensee can expect to have primary access to at most 4.4 MHz of spectrum at 1990-2025 MHz and 4.4 MHz of spectrum at 2165-2200 MHz.

Against this background, a LEO MSS provider's stock of spectrum for present and future needs is limited to 27.85 MHz at 1610-1621.35 MHz and 2483.5-2500 MHz and approximately 8.8 MHz at 2 GHz. This 36.65 MHz is insufficient to offer services compatible with third generation terrestrial systems, which will be broadband-data oriented and require more bandwidth than the voice and low-rate data services that are currently provided by LEO MSS providers. In fact, SIA estimates that LEO MSS providers will need an additional 10-15 MHz of spectrum in each direction to offer third generation mobile services that are competitive with those that will be offered by terrestrial providers.<sup>19</sup> Thus, LEO MSS providers will need approximately 30 MHz of additional spectrum.

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only new, carefully designed broadband LEO MSS, *e.g.*, Skybridge, that can share spectrum with GSO MSS).

<sup>18</sup> *Establishment of Policies and Service Rules for the Mobile-Satellite Service in the 2 GHz Band* (Report and Order), 15 FCC Rcd 16127, ¶ 16 (2000).

<sup>19</sup> *See Establishment of Policies and Service Rules for the Mobile-Satellite Service in the 2 GHz Band*, IB Docket 99-81, Supplemental Comments of Globalstar at 7-8 (filed Feb. 17, 2000).



### III. CONCLUSION

There is no evidence on this record that the 2500-2520 MHz and 2670-2690 MHz bands cannot be shared between the MSS and Fixed Services. On the contrary, both TIA and ITU, unquestionably expert technical organizations, have laid the groundwork for sharing. Moreover, the spectrum currently allocated to the MSS is not sufficient to allow the development of next generation systems. The Commission must reconsider its decision to dismiss the *SIA Petition* and request comments on the merits of allocating this band at least on a co-primary basis to MSS.

Respectfully submitted,

/s/ Michael Fitch  
Michael Fitch,  
Chair

/s/ Clayton Mowry  
Clayton Mowry  
Executive Director

The Satellite Industry Association  
225 Reinekers Lane, Suite 600  
Alexandria, VA 22314  
(703) 549-6990

February 22, 2001

### **CERTIFICATE OF SERVICE**

I, Victoria Curtis, hereby certify that true and correct copies of the preceding Petition for Reconsideration of the Satellite Industry Association were served this February 22, 2001 via the FCC Electronic Comment Filing System and by hand delivery upon the following party:

International Transcription Services, Inc.  
1231 20<sup>th</sup> Street, NW  
Washington, DC 20037

A handwritten signature in black ink, appearing to read "Victoria Curtis", with a long horizontal flourish extending to the right.

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Victoria Curtis  
Legal Assistant

February 22, 2001